

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A control area network comprising:

a master controller provided with a dispatch component for sending commands;

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a first device and a second devices respectively coupled to said master controller, said first device having a first state representing a plurality of data values associated with said first device, and said second device having a second state representing a plurality of data values associated with said second device; and

~~a virtual device associated with said first and second devices, said virtual device having a virtual device state representing a plurality of data values associated with said virtual device, said virtual device linking said virtual device state to said first and second states.~~

a device manager disposed to receive a command from said dispatch component of said master controller, and to control operation of said first and second devices in response to said command by constructing a virtual device and coupling said virtual device to said first and second devices to provide control information thereto.

2. (Currently Amended) The control area network according to claim 1, wherein said first and second devices ~~are~~ each has a device a port, and said virtual device has ~~is~~ a virtual port linked to each of said device ports.

3. (Currently Amended) The control area network according to claim 1, wherein ~~said first and second devices are each levels and~~ said virtual device ~~is a virtual level~~ has a virtual device state that is linked to said first and second states, and is adapted to control said first and second states.

4. (Original) The control area network according to claim 1, wherein said first and second devices are each channels and said virtual device is a virtual channel.

5. (Currently Amended) The control area network according to claim 1, ~~further including a~~ wherein said device manager ~~associated with~~ comprises a component of said master controller.

6. (Original) The control area network according to claim 5 wherein said device manager is operable to utilize said virtual device to maintain said virtual device state and said first and second states in a substantially similar condition.

7. (Original) The control area network according to claim 5 further including a data state change request being received by said virtual device, a first generated data state change request being generated by said device manager based on said data state change request and sent to said first device, and a second generated data state change request being generated by said device manager based on said data state change request and sent to said second device.

8. (Original) The control area network according to claim 7, wherein said data state change request is a command sent by said master controller in the control area network.

9. (Original) The control area network according to claim 7, wherein said virtual device state is updated in response to said data state change request, said first state is updated in response to said first generated data state change request and said second state is updated in response to said second data state change request.

10. (Original) The control area network according to claim 7, wherein said first and second generated data state changes request are generated by replicating said data state change request received by said virtual device such that said first and second generated data state change requests are substantially similar to said data state change request.

11. (Original) The control area network according to claim 10, wherein said first and second devices are each operable to respond to input by changing said respective first and second states, wherein the change in said first state effects substantially similar changes in said virtual device state, and wherein the change in said second state effects substantially similar changes in said virtual device state.

12. (Original) The control area network according to claim 11, wherein said input is an external input from an associated external device.

13. (Original) The control area network according to claim 11, wherein said input is an external input from a user.

14. (Original) The control area network according to claim 10 further including level input, wherein each of said virtual device state and said first and second states include a level data portion therein, wherein said first and second devices are each operable to respond to said input by changing said level data portion of said respective first and second states, wherein the change in said level data portion of said first state is replicated in said level data portion of said virtual device state by said device manager and the change in said level data portion of said first state is replicated in said level data portion of said second device state by said device manager, and wherein the change in said level data portion of said second state is replicated in said level data portion of said virtual device state by said device manager and the change in said level data portion of said second state is replicated in said level data portion of said first device state by said device manager such that each of said level data portions of said virtual device state, said first device state and said second device state are maintained in a substantially similar condition.

15. (Original) The control area network according to claim 10 further including channel change input, wherein each of said virtual device state and said first and second states include a channel data portion therein, wherein said first and second devices are each operable to respond to said channel change input by changing said channel data portion of said respective first and second states, wherein the change in said channel data portion of said first state is replicated in said channel data portion of said virtual device state by said device manager, and wherein the change in said channel data portion of said second state is replicated in said channel data portion of said virtual device state by said device manager.

16. (Original) The control area network according to claim 10 further including string change input, wherein each of said virtual device state and said first and second states include a string data portion therein, wherein said first and second devices are each operable to respond to said string change input by changing said string data portion of said respective first and second states, wherein the change in said string data portion of said first state is replicated in said string data portion of said virtual device state by said device manager, and wherein the change in said string data portion of said second state is replicated in said string data portion of said virtual device state by said device manager.

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17. (Original) The control area network according to claim 10 further including command change input, wherein each of said virtual device state and said first and second states include a command data portion therein, wherein said first and second devices are each operable to respond to said command change input by changing said command data portion of said respective first and second states, wherein the change in said command data portion of said first state is replicated in said command data portion of said virtual device state by said device manager, and wherein the change in said command data portion of said second state is replicated in said command data portion of said virtual device state by said device manager.

18. (Original) The control area network according to claim 5, wherein said linking between said virtual device and said first and second devices may be created at run-time.


19. (Original) The control area network according to claim 5, wherein said linking between said virtual device and said first and second devices may be modified at run-time.

20. (Original) The control area network according to claim 5, wherein said linking between said virtual device and said first and second devices may be defined only at compile time and may only be changed by resetting said master controller.

21. (Currently Amended) A control area network comprising:

a master controller provided with a dispatch component;

a plurality of devices coupled to said master controller, each of said devices having a respective state representing a plurality of data values associated with said respective devices; and

 a device manager provided in said master controller to receive a command from said dispatch component, and to control operation of said plurality of devices by constructing a virtual device associated with a set of said devices, said virtual device having a virtual device state, ~~representing a plurality of data values associated with~~ and coupling said virtual device, ~~said virtual device linking said virtual device state and~~ to said set of devices to selectively establish and change said respective states associated with said set.

22. (Original) The control area network according to claim 21, wherein said virtual device state and said respective states are maintained in a substantially similar condition.

23. (Original) The control area network according to claim 21 further including a device manager associated with said master controller and said virtual device being further associated with said device manager.

24. (Original) The control area network according to claim 23 further including a data state change request received by said virtual device, a plurality of respective device state change requests generated by said virtual device for each device in said set in response to said data state change request and wherein said device state change requests are sent to said each device in said set.

25. (Original) The control area network according to claim 24, wherein said data state change request is a command sent by said master controller in the control area network.

26. (Original) The control area network according to claim 24, wherein said virtual device updates said virtual device state in response to said data state change request and each of said devices in said set update said respective states in response to said device state change requests.

27. (Original) The control area network according to claim 24, wherein said device state change requests are generated by replicating said data state change request received by said virtual device such that each said device state change request is substantially similar to said data state change request.

28. (Original) The control area network according to claim 27 further including level input, wherein each of said virtual device state and said respective states include a level data portion therein, wherein said devices in said set are each operable to respond to said level input by changing said level data portion of said respective states, wherein the change in said level data portion of state of one of said devices in said set is effected in said level data portion of said state associated with each of said devices in said set distinct from said one of said devices in said set and in said level data portion of said virtual device state such that each of said level data portions of said respective states associated with said devices in said set and said virtual device state are maintained in a substantially similar condition.

29. (Original) The control area network according to claim 27 further including channel change input, wherein each of said virtual device state and said respective states include a channel data portion therein, wherein said devices in said set are each operable to respond to said channel input by changing said channel data portion of said respective states, wherein the change in said channel data portion of state of one of said devices in said set is effected in said channel data portion of said virtual device state.

30. (Original) The control area network according to claim 27 further including string change input, wherein each of said virtual device state and said respective states include a string data portion therein, wherein said devices in said set are each operable to respond to said string input by changing said string data portion of said respective states, wherein the change in said string data portion of state of one of said devices in said set is effected in said string data portion of said virtual device state.

31. (Original) The control area network according to claim 27 further including command change input, wherein each of said virtual device state and said respective states include a command data portion therein, wherein said devices in said set are each operable to respond to said command input by changing said command data portion of said respective states, wherein the change in said command data portion of state of one of said devices in said set is effected in said command data portion of said virtual device state.

32. (Original) The control area network according to claim 28, wherein said level input is from an associated external device associated with said devices.

33. (Original) The control area network according to claim 28, wherein said level input is an external input from a user.

34. (Original) The control area network according to claim 21, wherein said linking between said virtual device state and said respective device states may be created at run-time.

35. (Original) The control area network according to claim 21, wherein said linking between said virtual device state and said respective device states may be modified at run-time.

36. (Original) The control area network according to claim 21, wherein said linking between said virtual device state and said respective device states may be defined only at compile time and may only be changed by resetting said master controller.

37. (Currently Amended) A method for operating a control area network having
~~supporting a virtual device on~~ a master controller ~~in a control area network~~ comprising:

routing a command from a dispatch component in the master controller to a device
manager therein;

operating the device manager in response to the command to construct a virtual
device;

coupling the virtual device to each of a plurality of devices;

linking a plurality of data states respectively associated with the virtual device and
each of the plurality of devices associated with the virtual device; and

maintaining each respective data state in a substantially similar condition.

38. (Original) The method according to claim 37, wherein maintaining each
respective data state in a substantially similar condition includes:

receiving a data state change request at the virtual device, wherein the data state
change request effects a change in the data state of the virtual device; and

replicating the data state change request for each of the devices associated with the
virtual device.

39. (Original) The method according to claim 38, wherein replicating the command for each of the devices associated with the virtual device further includes changing the data state of the virtual device in response to the data state change request, and wherein maintaining each respective data state in a substantially similar condition further includes changing the data state of each of the devices associated with the virtual device in response to the replicated data state change request.

40. (Original) The method according to claim 39, wherein the data state change request is a command sent by the master controller in the control area network.

41. (Original) The method according to claim 37, wherein maintaining each respective data state in a substantially similar condition includes:

receiving a data state change request at a one of the devices associated with the virtual device; and

sending the data state change request to the virtual device.

42. (Original) The method according to claim 41, wherein receiving a data state change request at a one of the devices associated with the virtual device includes changing the data state of the one of the devices in response to the data state change request.

43. (Original) The method according to claim 42, wherein the data state change request is a command sent by a master controller in the control area network.

44. (Original) The method according to claim 37, wherein maintaining each respective data state in a substantially similar condition includes:

receiving a level state change request at a one of the devices associated with the virtual device;

sending the level state change request to the virtual device;

changing a level data state portion of the data state of the virtual device in response to the level state change request;

replicating the level state change request for each of the devices associated with the virtual device; and

changing a level data portion of the data state of each of the devices associated with the virtual device in response to the replicated data state change request.

45. (Original) The method according to claim 44, wherein the data state change request is a command sent by a master controller in the control area network.